pHE



## ENTERED

1653

RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/664,326

DATE: 04/04/2002 TIME: 15:16:31

Input Set : A:\24811693.app

Output Set: N:\CRF3\04042002\1664326.raw

```
3 <110> APPLICANT: HABERMANN, PAUL
            BENDER, RUDOLF
      6 <120> TITLE OF INVENTION: SIGNAL SEQUENCES FOR PREPARING LEU-HIRUDIN BY SECRETION
            BY E. COLI INTO THE CULTURE MEDIUM
      9 <130> FILE REFERENCE: 02481.1693
C--> 11 <140> CURRENT APPLICATION NUMBER: US/09/664,326
                                                           RECEIVED
C--> 12 <141> CURRENT FILING DATE: 2000-09-18
     14 <160> NUMBER OF SEQ ID NOS: 33
     16 <170> SOFTWARE: PatentIn Ver. 2.1
                                                            APR 1 1 2002
     18 <210> SEQ ID NO: 1
     19 <211> LENGTH: 25
                                                        TECH CENTER 1600/2900
     20 <212> TYPE: DNA
     21 <213> ORGANISM: Artificial Sequence
     23 <220> FEATURE:
     24 <223> OTHER INFORMATION: Description of Artificial Sequence: Oligonucleotide
     26 <400> SEOUENCE: 1
                                                                          25
     27 ttttttaag cttgggctgc aggtc
     30 <210> SEQ ID NO: 2
     31 <211> LENGTH: 54
     32 <212> TYPE: DNA
     33 <213> ORGANISM: Artificial Sequence
     35 <220> FEATURE:
     36 <223> OTHER INFORMATION: Description of Artificial Sequence: Primer
     38 <400> SEQUENCE: 2
     39 tggcactggc aggtttcgct accgtagcgc aagcccttac gtatactgac tgca
     42 <210> SEQ ID NO: 3
     43 <211> LENGTH: 57
     44 <212> TYPE: DNA
     45 <213> ORGANISM: Artificial Sequence
     47 <220> FEATURE:
     48 <223> OTHER INFORMATION: Description of Artificial Sequence: Primer
     50 <400> SEQUENCE: 3
     51 ttttttqaat tcatqaaaaa qacaqctatc gcattagcag tggcactggc aggtttc
     54 <210> SEQ ID NO: 4
     55 <211> LENGTH: 58
     56 <212> TYPE: DNA
     57 <213> ORGANISM: Artificial Sequence
     59 <220> FEATURE:
     60 <223> OTHER INFORMATION: Description of Artificial Sequence: Primer
     62 <400> SEQUENCE: 4
     63 ggttctctta ttgccgctac ttctttcggc gttctggcac ttacgtatac tgactgca 58
     66 <210> SEQ ID NO: 5
```

67 <211> LENGTH: 56

DATE: 04/04/2002 RAW SEQUENCE LISTING TIME: 15:16:31 PATENT APPLICATION: US/09/664,326

Input Set : A:\24811693.app

- 68 <212> TYPE: DNA
- 69 <213> ORGANISM: Artificial Sequence
- 71 <220> FEATURE:
- 72 <223> OTHER INFORMATION: Description of Artificial Sequence: Primer
- 74 <400> SEQUENCE: 5
- 75 ttttttgaat tcatgaaaaa caccttgggc ttggccattg gttctcttat tgccgc 56
- 78 <210> SEQ ID NO: 6
- 79 <211> LENGTH: 61
- 80 <212> TYPE: DNA
- 81 <213> ORGANISM: Artificial Sequence
- 83 <220> FEATURE:
- 84 <223> OTHER INFORMATION: Description of Artificial Sequence: Primer
- 86 <400> SEQUENCE: 6
- 87 gttgccgtcg cagcgggcgt aatgtctgct caggcaatgg ctcttacgta tactgactgc 60
- 88 a
- 91 <210> SEQ ID NO: 7
- 92 <211> LENGTH: 59
- 93 <212> TYPE: DNA
- 94 <213> ORGANISM: Artificial Sequence
- 96 <220> FEATURE:
- 97 <223> OTHER INFORMATION: Description of Artificial Sequence: Primer
- 99 <400> SEQUENCE: 7
- 100 ttttttgaat tcatgatgat tactctgcgc aaacttcctc tggcggttgc cgtcgcagc 59
- 103 <210> SEQ ID NO: 8
- 104 <211> LENGTH: 63
- 105 <212> TYPE: DNA
- 106 <213> ORGANISM: Artificial Sequence
- 108 <220> FEATURE:
- 109 <223> OTHER INFORMATION: Description of Artificial Sequence: Primer
- 111 <400> SEQUENCE: 8
- 112 ctaccctgat gggtaccgct ggtctgatgg gtaccgctgt tgctcttacg tatactgact 60
- 113 gca
- 116 <210> SEQ ID NO: 9
- 117 <211> LENGTH: 60
- 118 <212> TYPE: DNA
- 119 <213> ORGANISM: Artificial Sequence
- 121 <220> FEATURE:
- 122 <223> OTHER INFORMATION: Description of Artificial Sequence: Primer
- 124 <400> SEQUENCE: 9
- 125 ttttttgaat tcatgaaaaa aatgaacctg gctgtttgca tcgctaccct gatgggtacc 60
- 128 <210> SEQ ID NO: 10
- 129 <211> LENGTH: 61
- 130 <212> TYPE: DNA
- 131 <213> ORGANISM: Artificial Sequence
- 133 <220> FEATURE:
- 134 <223> OTHER INFORMATION: Description of Artificial Sequence: Primer
- 136 <400> SEQUENCE: 10
- 137 ctgatcccgt tctttgcagc gttctgcctg ccggttttcg cgcttacgta tactgactgc 60
- 138 a

RAW SEQUENCE LISTING DATE: 04/04/2002 PATENT APPLICATION: US/09/664,326 TIME: 15:16:31

Input Set : A:\24811693.app

- 141 <210> SEQ ID NO: 11
- 142 <211> LENGTH: 56
- 143 <212> TYPE: DNA
- 144 <213> ORGANISM: Artificial Sequence
- 146 <220> FEATURE:
- 147 <223> OTHER INFORMATION: Description of Artificial Sequence: Primer
- 149 <400> SEQUENCE: 11
- 150 ttttttgaat tcatgtccat ccagcacttc cgcgtcgccc tgatcccgtt ctttgc 56
- 153 <210> SEQ ID NO: 12
- 154 <211> LENGTH: 53
- 155 <212> TYPE: DNA
- 156 <213> ORGANISM: Artificial Sequence
- 158 <220> FEATURE:
- 159 <223> OTHER INFORMATION: Description of Artificial Sequence: Primer
- 161 <400> SEQUENCE: 12
- 162 gctgccgctg ctgttcaccc cggttaccaa agcgcttacg tatactgact gca 53
- 165 <210> SEQ ID NO: 13
- 166 <211> LENGTH: 57
- 167 <212> TYPE: DNA
- 168 <213> ORGANISM: Artificial Sequence
- 170 <220> FEATURE:
- 171 <223> OTHER INFORMATION: Description of Artificial Sequence: Primer
- 173 <400> SEQUENCE: 13
- 174 ttttttgaat tcatgaaaca gtcgaccatc gcgctggcgc tgctgccgct gctgttc 57
- 177 <210> SEQ ID NO: 14
- 178 <211> LENGTH: 53
- 179 <212> TYPE: DNA
- 180 <213> ORGANISM: Artificial Sequence
- 182 <220> FEATURE:
- 183 <223> OTHER INFORMATION: Description of Artificial Sequence: Primer
- 185 <400> SEQUENCE: 14
- 186 gctgagctgc ctgatcaccc cggtgtccca ggcgcttacg tatactgact gca 53
- 189 <210> SEQ ID NO: 15
- 190 <211> LENGTH: 57
- 191 <212> TYPE: DNA
- 192 <213> ORGANISM: Artificial Sequence
- 194 <220> FEATURE:
- 195 <223> OTHER INFORMATION: Description of Artificial Sequence: Primer
- 197 <400> SEQUENCE: 15
- 198 ttttttgaat tcatgaaaca gagcgcgatc gcgctggctc tgctgagctg cctgatc 57
- 201 <210> SEQ ID NO: 16
- 202 <211> LENGTH: 64
- 203 <212> TYPE: DNA
- 204 <213> ORGANISM: Artificial Sequence
- 206 <220> FEATURE:
- 207 <223> OTHER INFORMATION: Description of Artificial Sequence: Primer
- 209 <400> SEOUENCE: 16
- 210 ctttcgctga gtatggcgtt ggggatttca ctgcccgcat gggcacttac gtatactgac 60
- 211 tgca 64

RAW SEQUENCE LISTING DATE: 04/04/2002 PATENT APPLICATION: US/09/664,326 TIME: 15:16:31

Input Set : A:\24811693.app

- 214 <210> SEQ ID NO: 17
- 215 <211> LENGTH: 65
- 216 <212> TYPE: DNA
- 217 <213> ORGANISM: Artificial Sequence
- 219 <220> FEATURE:
- 220 <223> OTHER INFORMATION: Description of Artificial Sequence: Primer
- 222 <400> SEQUENCE: 17
- 223 ttttttqaat tcatqaaatc gcggtacaaa cgtttgacct ccctggcgct ttcgctgagt 60
- 224 atggc
- 227 <210> SEQ ID NO: 18
- 228 <211> LENGTH: 55
- 229 <212> TYPE: DNA
- 230 <213> ORGANISM: Artificial Sequence
- 232 <220> FEATURE:
- 233 <223> OTHER INFORMATION: Description of Artificial Sequence: Primer
- 235 <400> SEQUENCE: 18
- 236 tggtttcagc tttagtaagc ggggttgcat ttgctcttac gtatactgac tgcac 55
- 239 <210> SEQ ID NO: 19
- 240 <211> LENGTH: 60
- 241 <212> TYPE: DNA
- 242 <213> ORGANISM: Artificial Sequence
- 244 <220> FEATURE:
- 245 <223> OTHER INFORMATION: Description of Artificial Sequence: Primer
- 247 <400> SEQUENCE: 19
- 248 ttttgggaat tcatgaaaaa gacaattatg tctctggctg tggtttcagc tttagtaagc 60
- 251 <210> SEQ ID NO: 20
- 252 <211> LENGTH: 60
- 253 <212> TYPE: DNA
- 254 <213> ORGANISM: Artificial Sequence
- 256 <220> FEATURE:
- 257 <223> OTHER INFORMATION: Description of Artificial Sequence: Primer
- 259 <400> SEQUENCE: 20
- 260 cggcgctgag tctcgcctta ttttctcacc tatcttttgc ccttacgtat actgactgca 60
- 263 <210> SEQ ID NO: 21
- 264 <211> LENGTH: 57
- 265 <212> TYPE: DNA
- 266 <213> ORGANISM: Artificial Sequence
- 268 <220> FEATURE:
- 269 <223> OTHER INFORMATION: Description of Artificial Sequence: Primer
- 271 <400> SEQUENCE: 21
- 272 ttttttgaat tcatgtcatt tcatcaccgg gtatttaaac tgtcggcgct gagtctc 57
- 275 <210> SEQ ID NO: 22
- 276 <211> LENGTH: 227
- 277 <212> TYPE: DNA
- 278 <213> ORGANISM: Unknown Organism
- 280 <220> FEATURE:
- 281 <223> OTHER INFORMATION: Description of Unknown Organism: Hirudin-encoding
- 282 DNA sequence
- 284 <220> FEATURE:

RAW SEQUENCE LISTING DATE: 04/04/2002 PATENT APPLICATION: US/09/664,326 TIME: 15:16:31

Input Set : A:\24811693.app

```
285 <221> NAME/KEY: CDS
286 <222> LOCATION: (1)..(195)
288 <400> SEQUENCE: 22
289 ctt acg tat act gac tgc act gaa tct ggt cag aac ctg tgc ctg tgc
                                                                       48
290 Leu Thr Tyr Thr Asp Cys Thr Glu Ser Gly Gln Asn Leu Cys Leu Cys
291
                                         10
                                                                       96
293 gaa gga tot aac gtt tgc ggc cag ggt aac aaa tgc atc ott gga toc
294 Glu Gly Ser Asn Val Cys Gly Gln Gly Asn Lys Cys Ile Leu Gly Ser
                 20
297 gac ggt gaa aag aac cag tgc gtt act ggc gaa ggt acc ccg aaa ccg
                                                                       144
298 Asp Gly Glu Lys Asn Gln Cys Val Thr Gly Glu Gly Thr Pro Lys Pro
299
             35
                                 40
301 cag tot cat aac gac ggc gac ttc gaa gag atc cot gag gaa tac ott
                                                                       192
302 Gln Ser His Asn Asp Gly Asp Phe Glu Glu Ile Pro Glu Glu Tyr Leu
                                                                       227
305 cag taatagaget egtegacetg cageecaage tt
306 Gln
307 65
310 <210> SEQ ID NO: 23
311 <211> LENGTH: 65
312 <212> TYPE: PRT
313 <213> ORGANISM: Unknown Organism
315 <220> FEATURE:
316 <223> OTHER INFORMATION: Description of Unknown Organism: Hirudin-encoded
          amino acid sequence
317
319 <400> SEQUENCE: 23
320 Leu Thr Tyr Thr Asp Cys Thr Glu Ser Gly Gln Asn Leu Cys Leu Cys
                                         10
323 Glu Gly Ser Asn Val Cys Gly Gln Gly Asn Lys Cys Ile Leu Gly Ser
                 20
                                     25
326 Asp Gly Glu Lys Asn Gln Cys Val Thr Gly Glu Gly Thr Pro Lys Pro
                                 40
                                                      45
329 Gln Ser His Asn Asp Gly Asp Phe Glu Glu Ile Pro Glu Glu Tyr Leu
330
                             55
        . 50
332 Gln
333 65
337 <210> SEQ ID NO: 24
338 <211> LENGTH: 30
339 <212> TYPE: PRT
340 <213> ORGANISM: Unknown Organism
342 <220> FEATURE:
343 <223> OTHER INFORMATION: Description of Unknown Organism: Control:
          cqtase-Ala-hirudin
346 <400> SEQUENCE: 24
347 Met Lys Arg Asn Arg Phe Phe Asn Thr Ser Ala Ala Ile Ala Ile Ser
350 Ile Ala Leu Asn Thr Phe Phe Cys Ser Met Gln Thr Ile Ala
                                     25
                 20
354 <210> SEQ ID NO: 25
```

VERIFICATION SUMMARY

DATE: 04/04/2002

PATENT APPLICATION: US/09/664,326

TIME: 15:16:32

Input Set : A:\24811693.app

Output Set: N:\CRF3\04042002\1664326.raw

 $\texttt{L:} 11 \ \texttt{M:} 270 \ \texttt{C:} \ \texttt{Current Application Number differs, Replaced Application Number} \\$ 

L:12 M:271 C: Current Filing Date differs, Replaced Current Filing Date